# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 10/531,206 | 04/14/2005 | Chan-Wah Ng | L9289.05123 | 6995 |

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| EXAMINER |
|---|
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/531,206 | NG ET AL. |
| | Examiner | Art Unit | |
| | Joshua Smith | 2619 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>*14 April 2005*</u>.

2a)☐ This action is **FINAL**.          2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-9* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All    b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>*4/14/2005, 8/2/2005, 11/1/2007*</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

### *Information Disclosure Statement*

1.      The information disclosure statement filed 4/14/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

2.      The information disclosure statement filed 11/1/2007 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### *Claim Rejections - 35 USC § 103*

1.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.     The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

   1.     Determining the scope and contents of the prior art.
   2.     Ascertaining the differences between the prior art and the claims at issue.
   3.     Resolving the level of ordinary skill in the pertinent art.
   4.     Considering objective evidence present in the application indicating
          obviousness or nonobviousness.

**Claims 1, 5 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wada et al. (Patent No.: US 7,130,290 B2) in view of Nakatsugawa et al. (Patent

No.: US 7,136,365 B2), hereafter referred to as Wada and Nakatsugawa, respectively.

**In regard to Claims 1 and 9**, Wada teach in column 20, lines 45-49, and in

FIGS. 7a-7c, when a mobile host migrates across networks 1, 2, 3, and 4, it obtains a

temporary address assigned on each network, and in, column 12, lines 16-18, and in

FIG. 2, Sheet 2 of 25, an address obtainment unit (item 25), that obtains an address of

a mobile host when it migrates to another network, and in column 5, line 60 to column 6,

line 2, a home address assigned when a mobile node is attached to the same network

as the home migration control unit (an access section that gains access to other

network by using a temporarily assigned global address which is different from a unique

global address).

Wada also teaches in column 11, lines 33-44, and in FIG. 1, Sheet 1 of 45, an

application unit (item 2) that is relevant for a higher layer in the OSI model and includes

an application layer and operates as TCP at TCP/IP (Transmission Control

Protocol/Internet Protocol), and a migration address unit (item 3) processes migration

addresses (a generating section that generates a message)

Wada also teaches in column 11, lines 46-48, and in FIG. 1, Sheet 1 of 45,

communication control unit (item 4) that control communications and is relevant for a

lower layer in the OSI model (a transmitting section that transmits a generated message

to other network element apparatus in other network).

Wada fails to teach a message which contains a unique global address, a

temporarily assigned global address, and a global address of a router indicating a

location of a network element apparatus in global network. Nakatsugawa teaches these

limitations.

In the same field of endeavor, Nakatsugawa teaches column 15, lines 7-14, and

in FIG. 25, Sheet 20 of 34, a IPv6 header with a home address option, a CoA (Care of

Address) option, and a destination address, where, in column 15, lines 40-52, a mobile

node adapted router judges that the destination address of the IPv6 header is its own

address (a message which contains a unique global address, a temporarily assigned

global address, and a global address of a router indicating a location of a network

element apparatus in global network). It would have been obvious to one of ordinary

skill in the art at the time of the invention to combine the invention of Nakatsugawa with

the invention of Wada since Nakatsugawa provides an IPv6 header structure that would

allow the apparatus of Wada to be compatible with IPv6 and would allow a packet

transmitted in the method of Wada to include both the address of a router associated

with an outside network and the care-of-address of a mobile node in two separate

header fields for operation in an IPv6 environment, and expanding the capabilities of the

apparatus of Wada to include operations involving IPv6 communications and providing

services to customers using IPv6.


**In regard to Claim 5**, as discussed in the rejection of Claim 1, Wada teaches a

unique home address and a temporarily assigned global address. Wada further

teaches a receiving section and a recording section that records an entry containing

addresses in a corresponding manner with a received message. Wada fails to teach,

header fields, a home address, a care-of-address, and an access router address field

indicating a global address of a router. As discussed in the rejection of Claim 1,

Nakatsugawa teaches header fields, a home address, a care-of-address, and an access

router address field indicating a global address of a router.

Wada further teaches in column 13, lines 15-19, and in FIG. 3, Sheet 3 of 45,

after a message is received from a reception packet unit (item 35), a migration post

information unit (item 36), stores in the data hold unit (item 1) a correspondence

between a couple of addresses of a mobile host (a receiving section and a recording

section that records an entry containing addresses in a corresponding manner with a

received message).


**Claims 2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wada in view of Nakatsugawa, and further in view of Perkins et al. ("IP Mobility

Support", IETF RCF 2002, IBM, pages 16-20) and Narten et al. ("Neighbour Discovery

for IP Version 6 (IPv6)", IETF RFC 2461, pages 29-30), hereafter refer4ed to as Perkins

and Narten, respectively.

**In regard to Claim 2**, Wada fails to teach a field indicating whether a global

address of a router is contained in a message or not, a length field indicating a data

length of a part, and an access router address field indicating a global address of a

router. As discussed in the rejection of Claim 1, Nakatsugawa teaches an access router

address that is the global address of the router. Perkins teaches a type field indicating

whether an address of a router is contained in the message or not and an address field,

and Narten teaches a length field indicating the length of a data part.

Perkins teaches in Pages 16 to 20, section 2.1.1., a Mobility Agent

Advertisement Extension that contains a Type field and a Length field that indicates if

the message contains zero or more Care-of Addresses in its Care-of Addresses field

though the formula (6 + 4*N), where N is the number of care-of addresses advertised (a

type field indicating whether an address of a router is contained in the message or not).

It would have been obvious to one of ordinary skill in the art at the time of the invention

to combine the invention of Perkins with the invention of Wada since Perkins explicitly

teaches details of header fields outside of address fields that can be implemented in the

apparatus of Wada, so that the apparatus of Wada will have these fields to implement

Mobile IP and operate in a Mobile IP environment.

Narten teaches in Pages 29-30, section 4.6.2., a Prefix Length indicating the

number of leading bits in the Prefix that are valid (a length field indicating the length of a

data part). It would have been obvious to one of ordinary skill in the art at the time of

the invention to combine the invention of Narten with the invention of Wada since

Narten teaches explicitly teaches details of header fields outside of address fields that

can be implemented in the apparatus of Wada and provide information as to the length

of information that a packet is carrying is the valid payload is variable, facilitating in

fragmentation determination in packet received by the apparatus of Wada.


**In regard to Claim 3**, as discussed in the rejection of Claim 1, Wada teaches a

unique global address of a network element apparatus. Wada fails to teach an

advertisement message in IPv6, a type field indicating whether an address of a router is

contained in the message or not, and a length field indicating the length of a data part.

As discussed in the rejection of Claim 2, Perkins teaches a type field indicating whether

an address of a router is contained in the message or not and an address field, and

Narten teaches a length field indicating the length of a data part. Narten further teaches

an advertisement message in IPv6.

Narten further teaches in Page 18, Neighbor Discovery for IPv6 that includes a

Router Advertisement Message Format (an advertisement message in IPv6). It would

have been obvious to one of ordinary skill in the art at the time of the invention to

combine the invention of Narten with the invention of Wada since Narten teaches

message formats compatible with IPv6, and would allow the apparatus of Wada to be

compatible with IPv6 for operation in an IPv6 environment, and expanding the

capabilities of the apparatus of Wada to include operations involving IPv6

communications and providing services to customers using IPv6.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Nakatsugawa, and further in view of Ayerst et al. (Patent Number: 5,799,012), hereafter referred to as Ayerst.

In regard to Claim 4, as discussed in the rejection of Claim 1, Wada teaches network element apparatus and transmitted message. Wada fails to teach information related to reception or rejection of last transmitted message is contained in a reply of other network element in response to last transmitted message and next transmitted message contains information related to reception or rejection and information notifies other network element apparatus is able to take action to handle the message.

In the same field of endeavor, Ayerst teaches in column 24, lines 54-62, and in FIG. 6, Sheet 6 of 16, and in FIG. 8, Sheet 8 of 16, an ACK is sent indicating DUs (data units) were received with errors (information related to reception or rejection of last transmitted message is contained in a reply of other network element in response to last transmitted message).

Ayerst also teaches in column 25, lines 6-10, and in FIG. 6, Sheet 6 of 16, the two data units are re-transmitted with the transmission of 6 other data units, and, in column 12, lines 12-26, each data unit contains a 12 bit CRC for detecting errors and is assigned an ID number that is used in the ARQ process (next transmitted message contains information related to reception or rejection and information notifies other network element apparatus is able to take action to handle the message). It would have been obvious to one of ordinary skill in the art at the time of the invention to

combine the invention of Ayerst with the invention of Wada since Ayerst provides a

method of selectively acknowledging and retransmitting protocol data units, which can

be incorporated into the method of Wada to replace data with errors in an efficient

manner and provide a certain quality level of data communications to customers.


**Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in

view of Nakatsugawa, and further in view of Pannell et al. (Patent No.: US 6,208,644

B1) and Inoue (Patent No.: US 6,925,087 B2), hereafter referred to as Pannell and

Inoue, respectively.

**In regard to Claim 6**, Wada fails to teach an access router address field in a

message containing the global address of a router, updating entry sets in a case where

the received message contains an address, the address field of an entry using this

address, and setting, in a case where the received message does not contain an

address of a router, an address field of an entry is to be invalid.

As discussed in the rejection of Claim 2, Nakatsugawa teaches an access router

address field in a message containing the global address of a router.

In the same field of endeavor, Pannell teaches in column 11, lines 21-28, when

an ACK packet, a microcomputer reads the SRC field and creates or updates a table

entry in memory involving the incoming network source address SRC (updating entry

sets in a case where the received message contains an address, the address field of an

entry using this address). It would have been obvious to one of ordinary skill in the art

at the time of the invention to combine the invention of Pannell with the invention of

Wada since Pannell provides an apparatus where table entries in a memory can be created and updated, and the apparatus can be implemented in the apparatus of Wada to update the data hold unit in the apparatus of Wada.

In the same field of endeavor, Inoue teaches column 7, line 59 to column 8, line 3, a received message is analyzed and, if a received message is not an address information notification message, but a neighbor cache entry deletion message, a message processing unit invalidates an entry corresponding to that mobile terminal device (setting, in a case where the received message does not contain an address of a router, an address field of an entry is to be invalid). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Inoue with the invention of Wada since Inoue provides an apparatus that can invalidate enties in a memory, and the apparatus can be implemented in the apparatus of Wada to invalidate entries of the data hold unit in the apparatus of Wada so that expired entries are no longer stored and occupying memory capacity.

**Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Nakatsugawa, Pannell, Inoue, and further in view of La Porta et al. (Patent No.: US 6,496,505 B2), hereafter referred to as La Porta.

**In regard to Claim 7**, discussed in the rejection of Claim 5, Wada teaches a receiving section. Wada fails to teach a routing header is added by a router to a data packet received, and a routing header being used to instruct a network element to which destination is indicated with a termination address specified in a data packet to forward

a data packet to another destination, containing a global address of a final destination of

a data packet.

In the same field of endeavor, Narten teaches in Pages 31-32, section 4.6.3., a

Redirected Header that contains a packet that is being redirected (a routing header is

added by a router to a data packet received). It would have been obvious to one of

ordinary skill in the art at the time of the invention to combine the invention of Narten

with the invention of Wada since Narten teaches encapsulation of packet that is

consistent with IPv6 and provides the encapsulation method of Wada compatibility with

IPv6 technology and to provide IPv6 services to customers.

In the same field of endeavor, La Porta teaches in column 15, lines 13-27, and in

FIG. 9, Sheet 7 of 20, a handoff path setup message, where the mobile device IP

address filed (item 314) is set to the mobile device's IP address, and the destination IP

address field (item 318) is set to the IP address of the old base station from which the

mobile device is handed off, and the source IP address field (item 316) is set to the IP

address of the new base station to which the mobile device is handed off, implicitly

teaching that the mobile device is redirected to transmit to the source of this message,

which is the new base station (a routing header being used to instruct a network

element to which destination is indicated with a termination address specified in a data

packet to forward a data packet to another destination, containing a global address of a

final destination of a data packet). It would have been obvious to one of ordinary skill in

the art at the time of the invention to combine the invention of La Porta with the

invention of Wada since La Porta provides a method of how a wireless device can be

handed off efficiently to different base stations, which can be implemented in the

apparatus of Wada so that handoff is efficient as the mobile node is migrating between

network.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in

view of Nakatsugawa, and further in view of La Porta.

In regard to Claim 8, discussed in the rejection of Claim 5, Wada teaches a data

packet received by receiving section. Wada further teaches a source address. Wada

further teaches in column 26, lines 29-30, and in FIG. 11a, Sheet 11 of 45, a source

address (item 92). Wada fails to teach an entry in the home address field, a care-of-

address in the entry, and an access router address field of the entry.

Nakatsugawa teaches column 15, lines 7-14, and in FIG. 25, Sheet 20 of 34, a

IPv6 header with a home address option, a CoA (Care of Address) option, and a

destination address, where, in column 15, lines 40-52, a mobile node adapted router

judges that the destination address of the IPv6 header is its own address (an entry in

the home address field, a care-of-address in the entry, and an access router address

field of the entry). It would have been obvious to one of ordinary skill in the art at the

time of the invention to combine the invention of Nakatsugawa with the invention of

Wada since Nakatsugawa provides an IPv6 header structure that would allow the

apparatus of Wada to be compatible with IPv6 and would allow a packet transmitted in

the method of Wada to include both the address of a router associated with an outside

network and the care-of-address of a mobile node in two separate header fields for

operation in an IPv6 environment, and expanding the capabilities of the apparatus of

Wada to include operations involving IPv6 communications and providing services to

customers using IPv6.

In the same field of endeavor, La Porta teaches in column 36, lines 35-61, an

address in a IP packet's header is verified by comparing with entries in a foreign agent's

co-located care-of-address list, and if a query returns a negative result, the instant

packet received is dropped (determination is made on verification of whether an

address specified is authentic or not by using information related to an address which is

an address of a router contained in a data packet and which is different address from

another address). It would have been obvious to one of ordinary skill in the art at the

time of the invention to combine the invention of La Porta with the invention of Wada

since La Porta provides a method of verifying a packet to make certain it is acceptable

and not in error, providing stability and protection for the routing of packets in the

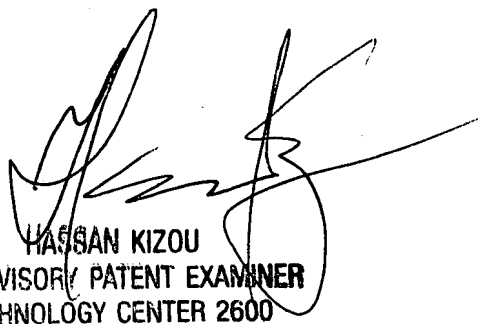apparatus of Wada.


### Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joshua Smith whose telephone number is 571-270-

1826. The examiner can normally be reached on Monday through Friday, 7:30 AM to

5:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua Smith
11/9/2007

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